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THE

CHANCELLOR'S REPORT

TO THE

BOARD OF REGENTS,

FOR THE

TWO YEARS ENDING NOVEMBER 30, 1884

LINCOLN.
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CHANCELLOR'S BIENNIAL REPORT.

To the Honorable the Board of Regents:

I have the honor to present my biennial report for the period closing November 30, 1884.

THE FACULTY.

Within this period material changes have been made in the *personnel* of the Faculties. Professor H. E. Hitchcock, Dean of the Academic Faculty, who had become acting Chancellor on the retirement of Dr. E. B. Fairfield in June, 1882, continued in that position until January 1, 1884, the date of my own accession.

On the 9th of November, 1883, the Chair of Natural Sciences was vacated by the retirement of Professor Samuel Aughey, after a tenure of twelve years or from the opening of the University. At the annual meeting in June last, after careful search and considering the claims of many candidates, Dr. Lewis E. Hicks, at the time and for many years previously professor of Geology in Denison University, was unanimously elected to this chair, with the style of Professor of Geology and Allied Sciences. Professor Hicks entered upon his duties with the beginning of the present academic year.

At the March meeting of this year, the resignations of Prof. S, R. Thompson, of the Chair of Agriculture, and Prof. Harvey Culbertson, of the Chair of Horticulture, were accepted, to take effect September 1, 1884. At your instance search was made for men eminently fitted not only for the professorial, but for the public duties of these chairs; and at your June meeting Prof. A. E. Blount, of the Colorado Agricultural College, was called to the Chair of Agriculture, and Prof. C. E. Bessey, Vice-President of the Iowa Agricultural College, to that of Botany and Horticulture. After long consideration, Professor Blount was constrained for personal reasons to decline, but Professor Bessey accepted the chair tendered him with the Deanship of the Industrial Faculty, and has entered upon his duties. Pending the selection of a Professor of Agriculture, Mr. Henry H. Wing, B.Agr. of Cornell University, and assistant to Dr. Sturtevant at the New York Experiment Station at Geneva, was secured as instructor, and began his work at the opening of the year.

At a special meeting in August last, Dr. Robert R. Livingston, of Plattsmouth, and Dr. S. D. Mercer, of Omaha, were elected to the chairs respectively of Theoretical and Clinical Surgery—both *vice* Dr. Paul Grossmann, resigned.

The following resignations have also been accepted:

Ira Van Camp, M.D., as Professor of Obstetrics and Diseases of Women and Children.

F. W. Grube, M.A., as Professor of Modern Languages.

Samuel B. Hohmann, as Director of the Conservatory of Music.

Ellen Smith, M.A., as Principal of the Latin School.

Of these, Miss Smith resigned to become Registrar of the University.

Charles N. Little, M.A., a graduate of the University, and instructor in Higher Mathematics, was appointed Associate Professor of Civil Engineering in the Industrial College, and granted one year's leave of absence for further study. The following instructors have been employed during this period:

LEVI M. F. EASTERDAY, M.A., Physics and Astronomy, 1883–4.

CHARLES N. LITTLE, B.A., Higher Mathematics and Civil Engineering, 1883–4.

HOWARD W. CALDWELL, B.S., History, 1883–

BION H. CULVER, B.S., Modern Languages, 1883–
MRS. ADELAIDE DEARBORN, Elocution, 1882–
MADGE G. HITCHCOCK, Latin, 1882–4–
SARAH W. MOORE, Drawing and Painting, 1884–
CHARLES E. BENNETT, B.A., Greek and Latin, 1884–
T. MOREY HODGMAN, B.A., Physics and Mathematics, 1884–
HENRY H. WING, B. Agr., Agriculture, 1884–

STUDENTS.

The following table shows the attendance during the two academic years mainly covered by this report, and the first term of the current academic year :

COLLEGE OF LITERATURE, SCIENCE, AND THE ARTS.

	1882–83.	1883–84.	1884.
Graduate students	2	2	1
Seniors	11	10	6
Juniors	11	5	7
Sophomores	9	10	24
Freshmen	20	22	26
Special students	40	55	37
Second year preparatory	48	68	52
First year preparatory	89	88	61
	230	260	214

INDUSTRIAL COLLEGE.

Graduate students	0	0	1
Seniors	4	3	0
Juniors	1	0	0
Sophomores	3	4	2
Freshmen	6	6	0
Preparatory	8	8	13
	22	23	16

COLLEGE OF MEDICINE.

	1882–83.	1883–84.	1884.
Students		52	52

CONSERVATORY OF MUSIC.

	1882–83.	1883–84.	1884.
Students	52	25	(No instruction)
Total	288	349	282

GRADUATES AND DEGREES.

The graduates of 1883 numbered thirteen, distributed by degrees as follows :

BACHELORS OF ARTS.

CHAMPION CLEMENT CHASE	Omaha.
GEORGE GALE HITCHCOCK	Lincoln.
ALVIN LINCOLN WHITE	Lincoln.
WILLIAM ANDREW TRIS	Lincoln.

BACHELORS OF SCIENCE.

JOSEPHINE ELIZABETH CHAPMAN	Lincoln.
MINNIE ELLEN CODDING	York.
BION HENRY CULVER	Cambridge.
AMOS WILLIAM FOOTE	Elmwood.

BACHELORS OF LITERATURE.

EDSON PROSPER RICH	Falls City.
DANIEL HAMBLETON WHEELER, JR	Plattsmouth.

BACHELORS OF CIVIL ENGINEERING.

AMOS WILLIAM FOOTE	Elmwood.
SAMUEL VALENTINE MALLORY	Mankato, Kans.
ALANSON O. TAYLOR	Kewanee, Ill.

The graduates of 1884 numbered twenty, as follows:

DOCTORS OF MEDICINE.

Chas. Sumner Boggs	Cedar Bend.
Wm. Robert Knapp	York.
Kavork M. Krecorian	Tokat, Asia Minor.
Norman A. Sackett	Ewing.
John M. Zielie	Dorchester.
William R. Bolding	Dorchester.
Eugene D. Thurston	Ord.

BACHELORS OF ARTS.

George W. Botsford	Lincoln.
Robert L. Marsh	Lincoln.
Alexander A. Munro	Schuyler.

BACHELORS OF SCIENCE.

Annie D. Aldrich	Lincoln.
Flora Evelyn Frost	Lincoln.
Jesse Herman Holmes	Lincoln.
Herbert Watson Olmsted	Lincoln.

BACHELORS OF LITERATURE.

William Henry Lichty	Lincoln.
Clara Parks	Lincoln.
William P. Sullivan	Logan, Kansas.

BACHELORS OF CIVIL ENGINEERING.

Ellis Oscar Lewis	Falls City.
Edward J. Robinson	Lincoln.
Alvin Lincoln White, B.A.,	Lincoln.

HONORARY DEGREES.

1883.

LL.D., Champion S. Chase	Omaha.

1884.

LL.D., Prof. Elisha Benj. Andrews	Brown University.
M.A., Chas. N. Little, B.A.	University of Neb.

From these statistics you will be able to form a fair judgment of the general condition and progress of the University for the period under review. The Faculty has been greatly strengthened, students have increased in number and improved in quality, and the Baccalaureate degrees given in these two years equal more than half the entire number for the preceding ten years, or the whole previous existence of the University. As to the quality of work, reference to the appended reports from the various chairs of the Academic Faculty and the Deans of the Industrial and Medical Faculties will show that the University is no laggard as to the modern subject-matter and method of education. Heretofore the lack of judicious and thorough preparation has greatly crippled proper college work, and this disability cannot be removed at once. Looking at the Latin School as for the present our main feeder, it is gratifying to note its increasing efficiency. The instruction now given is unusually excellent. The fact remains, however, that the pupils come up with far less preparation for good work, on the average, than in the older states; and much time and strength must be spent in getting ready for what ought to be the beginning. Two steps have been taken toward remedying this evil. First, beginning with the present year, no conditions are allowed on the studies required for admission to our lowest grade; and, secondly, pupils who fail, after due admonition, to reach a grade of 60 per cent in their studies are promptly dismissed. We need now a more complete organization of the school, with a gradual but steady increase of requisitions, until its work shall begin at least one year higher than it now does. Of the means to this end, and to the ultimate discontinuance of the school itself, I shall speak further on in connection with the relation of the University to the other public schools of the state.

It is proper here to note the apparent decrease in attendance at the opening of the present year, as compared with the whole enrollment for the year preceding. In nearly every instance this may be accounted for by the increased requirements. From the Latin School many have been turned away or advised not to come, because of inadequate preparation for the lowest class; many others have been influenced by the declared policy of the University to remit the first year of preparatory work to the public schools wherever they were strong enough to undertake it, and the second year also in the few communities which now support fairly efficient high schools. The class of Specials, too, has been limited as strictly as possible to persons of mature years, who had lacked the advantages of good schools, and to others who value intellectual culture but can give but a remnant of time, saved from other work, to its attainment. The two higher college classes are small from causes reaching far back, but the lower classes are much larger than ever before; and the present total of academic College students is nearly 30 per cent higher than in either of the two years preceding. The attendance on the Industrial College has fallen off somewhat, as was to be expected from the fact that the new organization was necessarily delayed until near the end of the summer vacation. The College of Medicine enrolls the same number, fifty-two, as last year, and when it is remembered that nearly all of the new-comers enter for a three years' course, the number is as large as we should wish. Not included above are the students in art, some fifteen or twenty, under Miss Sarah W. Moore.

Of the spirit of order and industry which characterizes the great body of our students it is a pleasure to speak. Their life and work at the University justify the munificence of the state in the educational provision made for them.

COLLEGE OF LITERATURE, SCIENCE AND THE ARTS.

Your attention is called to the reports of the various departments in this college. Generally, I can say that this

Faculty is made up of men devoted to their calling and to the University, and wide awake to the educational movements of the day and to the advancement of science on their several lines. The state may have entire confidence in the quality of the education now given in this college, as well as in the fixed purpose and increasing power to strengthen and perfect it with the passing years

While we aim to be in the forefront of rational progress, the University will not abandon or neglect the studies which have given strength and flavor to the finest culture of the world ever since the revival of learning. Perhaps no institution in the country can now give relatively more attention to the new sciences of nature, none certainly more to the modern study of history. In the study of our own literature comparison may be challenged with the best. Mathematics, pure and applied in Civil Engineering, are well provided for. But the courses in philosophy, literature, and languages (classical and modern) must be strengthened. If we would not sink to the level of a mere technical school, we must offer a classical course as strong and attractive as our so-called literary or scientific courses. This, for reasons, we have not yet been able to do. The initial difficulty is to secure adequate preparation. It is easier in this new state to get into the other courses, and this puts the Classical at a serious disadvantage. It is believed, however, that the present organization of instruction in the Latin School —putting the Greek and Latin teaching entire into the hands of one thoroughly accomplished instructor—will tend to remedy this evil. Under this arrangement, thirteen pupils have begun Greek and eighty Latin the present year. The experiment of requiring every first-year pupil in the Latin School to take Latin, unless excused by special vote of the Faculty, is working well, and promises to secure a more permanent class of students and to strengthen materially all the college courses. Under the best present conditions, the Greek classes will remain comparatively small;

but nevertheless we owe it to the generations coming, when the scramble for material wealth shall have yielded somewhat to the aspiration for higher ends of life as society settles and the commonwealth ripens in character, to maintain here the traditions and the fact of a liberal classical culture. And that, too, while we magnify all that is good in the "new education."

In this connection, attention is called to the need of an early revision of all the Academic courses. This matter has been in the mind of the Faculty for a year past, and it is hoped they may be ready to submit their conclusions for your approval in June. It will be the controlling purpose so to frame each course as to give it the maximum of efficiency as an educational discipline, while encouraging to the utmost, within the limit thus fixed, special scholarship and independent research.

Among the clear necessities of this college is the provision of systematic and adequate instruction in philosophy. It is already apparent that the duties of administration, large and varied now and to grow with the growth of the University, can leave little time for professorial service on the part of the Chancellor. It has therefore seemed best from the outset to assume the style simply of Professor of Political Science, and to limit what teaching I may find time to do within that department. This is by common consent the department of instruction appropriate to the executive office, especially in an institution standing as this does at the head of a system of public education. With the excellent assistance of Instructor Caldwell, I hope to be able at least to inaugurate a course of political and economic studies of practical value as a preparation for citizenship and for public life. But this wise and necessary limitation leaves the important work in philosophy unprovided for, except by a draft on the energies of other chairs. Good service has been rendered in this way by the Professors of Greek and English, and this service will be repeated the present year. But a chair of Philosophy and Logic is indispensable in a faculty of liberal arts. Its work should sum up and organize and crown all the studies that enter into a liberal education. Without it, education, however well founded and grounded, lacks its keystone.

I recommend then that the Board now take into consideration the matter of filling the chair of Philosophy and Logic, with a view to final action at your June meeting.

The chair of Modern Languages has been vacant since the beginning of the present year, and its work has been divided up and carried on at no slight disadvantage by the Chancellor, the Professor of English, and Instructors Culver and Bennett. An appointment should be made as soon as, but no sooner than, the exactly right man can be secured. In this appointment, as in all others, reference should be had to the manifest destiny of the University, which is, as we believe, to steady and large growth. The foundation of a Philological Society, noticed elsewhere in this report, is one movement looking to a more perfect organization in this line of study. The appointment made to this chair should be one to strengthen the philological section of the faculty, as the scientific section has been strengthened by its recent accessions. The appointee should be, primarily, master of the chief living European languages and their historical philology; he should be specially strong in the languages of the Teutonic group, as they will constitute the more important chair when, in the growth of the University, the Romance Languages are set apart and assigned to another professor. It is desirable, also, to secure in this appointment a scholar well versed in Sanskrit and Comparative Philology. With such an addition to the faculty we should be able at once to offer our own graduates and others substantial and symmetrical courses of advanced philological study.*

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* This chair has since been filled by the election of Dr. August Hjalmar Edgren, of the University of Lund, in Sweden, and he will enter upon its

I can summarize but briefly the wants mentioned in department reports:

1. The Professor of Latin asks for a supply of text editions of Latin authors for class-room use in sight reading, for collateral reading, and for regular recitation use. My own experience authorizes a hearty endorsement of this request as reasonable and likely to produce excellent results in all classical study. But it can wait the replenishment of our treasury.

2. The Professor of English calls attention to the need of an assistant who may relieve him of the work in rhetoric and aid in the reading and correction of students' themes; also of a considerable addition to our library resources for the study of English Literature. The first need is an urgent one. Nearly all the other great lines of study—History, Modern Languages, Classics, Physics—have such provision in competent special instructors, whose work is mainly of Latin School grade. I should say that for years to come the training in English ought to be magnified in every possible way here. A little observation of our average college writing will carry conviction on this point. It is impossible for one man to do all this work, and to entrust a part of it to any one not selected on the ground of special training and high qualifications for the service will not secure the end in view. In attempting to be faithful to what seemed a primary duty, and in sharing the burdens of work not regularly provided for—as in Philosophy and French—Professor Sherman has had to sacrifice for the time his own higher work. We should not

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duties in April next. Professor Edgren is co-editor of Whitney's German Dictionary, author of a Sanskrit grammar, and of numerous literary and philological works in English, French, German, and Swedish. He has also had a large and successful experience in teaching Sanskrit and the modern languages, both in this country (where he was for seven years connected with the Sheffield Scientific School of Yale College) and in Europe.

begin another year without an instructor in English, and such certain provision as we have never yet had for securing to our students the pure and facile use, in speech and writing, of their own vernacular. The need of additional library resources for the higher work of the department I do not dwell upon here. The remarks on the library elsewhere in this report and the Librarian's report are sufficient.

3. The Professor of Geology asks justly for more room and more light as essential to any proper classification and educational use of the rich collections in his department. Such collections, to be of value to students and the public, must be authoritatively identified and classified and properly placed and cared for. Formerly, with a single professor in charge of the whole range of work in the natural and physical sciences, it was too much to expect this to be done. Now, however, that these sciences are distributed to three chairs, the University cannot afford any slovenliness in this regard. Adequate accommodations for this department are contemplated in a recommendation further on in this report.

Miss Moore desires to offer an elective study in Art History and Æsthetics, the same to be credited on courses for a degree. It seems to me but due encouragement to an accomplished instructor and to a kind of culture too much neglected among us that her request be granted and a suitable compensation fixed.

It has been found impracticable thus far to secure a suitable Director of the Conservatory of Music, but instruction will be provided soon. A room has been fitted up for Calisthenics, and the lady students are now provided with wholesome and developing exercise. The cost to the University has been inconsiderable: $15 for fitting up room and $4 per month for use of piano. Beside this latter item, which will be continuous, an appropriation of $10 is asked for to purchase wands and dumb-bells.

THE INDUSTRIAL COLLEGE.

I scarcely need to ask your attention again to the condition and needs of the Industrial College, for they have been in all your thoughts. But I cannot refrain from congratulating you on the accession of Professor Bessey to the chair of Botany and the Deanship of the College. On his sound judgment and practical experience we must largely rely in its further development; but we must not leave him to stand alone. I repeat now that, to justify its name and the intention of our organic law, the College must be made a school of the great industries of the state. With the present faculty, reinforced by a permanent professor of Agriculture, the existing courses in Agriculture and Civil Engineering can be carried on as well as anywhere in the country. But at least two additional courses ought to be offered after the present year, viz., in Veterinary Science and Mechanical Engineering. The former is becoming one of the foremost specialties in technical education, and recent experience at our very doors demonstrates its practical value in a great stock-growing state like ours. A professor, who should also be State Veterinarian, would be a valuable addition to the Faculty as well as a much needed public servant. The opening of such a department involves no expense beyond the salary paid, and would justify itself economically in the eyes of the state even if few or no students sought its advantages at the outset. I recommend therefore that you take the matter into careful consideration with a view to action at your next annual meeting.

The place of Mechanical Engineering in industrial schools is recognized and sure. Man is a tool-using animal, and training in the use of tools measures one main difference between skilled and unskilled labor. In a new state, where the carpenter and the smith are not always at call, a practical knowledge of mechanical principles ought to enter into the education of every farmer, while the modern "master of industry" is unthinkable without it; and certainly no industrial school can afford to ignore it.*

For a few hundred dollars a beginning may be made, and with a competent instructor success would be assured. Aside from the regular students of the College, it is believed that many workingmen—especially when the labor market is depressed as is now the case—would avail themselves of an opportunity thus to increase their capital of skill and knowledge. It would afford also a new escape for that class of youth whose brains run to their fingers; and who, though the despair of teachers, often have in them the making of most useful men and women. I recommend, therefore, that necessary facilities be provided and a competent instructor in mechanical engineering be secured for the next college year.

With four lines of study, fitting for as many departments of industrial life, thus offered to our youth, the University will have done her duty in the premises for the present. If industrial education in these specialties, thus supplied, find or create a fair demand among our people, it will then be time for further enlargement. Meantime, everything in your power should be done to make the College attractive as well as useful to those whom it is intended to benefit. We cannot indeed constrain the choice of an education on the part of our youth. If the farmer's boy prefer academic and professional studies, it is only a phase of the growing preference for the city over the country; and the remedy lies in a return to simple living generally, and in the investment of country life and pursuits with their proper comfort and dignity. Given the home nurture and the school training fitted to foster wholesome views of life, and the farm and the farmhouse will hold their own. Education will not be mainly a means of getting away from the homely independence of commerce with the soil to the unenviable "hard-scrabble" which sums up the average professional or business career. Such deep lying causes we cannot directly reach, but we can make the education given here in the name of the industries so genuine and strong that our best youth shall no longer despise it. In the report of Dean Bessey, which has come to my hand since the foregoing was written, I believe we have the earnest of such an education in the lines on which we have thus far worked; and I am confident, moreover, that the working out of the plans sketched by him will be of incalculable value to the state regardless of the number of students directly educated by the College.

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* The University of Michigan, independently of any such obligation as rests upon us, has opened such a department with marked success. Of this, President Angell, in his last annual report (received since my own was written) says: "The number of our students of Engineering, especially of Civil and Mechanical Engineering, is becoming so great that we are becoming somewhat embarrassed to make proper provision for them. The establishment and development of our Mechanical Laboratory and shops have awakened a new and enthusiastic interest in Mechanical Engineering. * * * No one doubts that Michigan is destined to be the seat of manifold and varied industries. Will she not be wise to train some of her sons with the help of the best scientific knowledge and practical skill to direct with the greatest efficiency those pursuits which depend for success on a complete knowledge of mechanism."

With a working plan, as admirable in its scientific as in its practical aspects, and such a corps of scientific men as we already have to form the nucleus of a working faculty, it remains to make the externals of this education as attractive as we may. So far as we can do it, all middle walls of partition or exclusion should be broken down. I said in my inaugural address that the government of the University would put only first-class men in the Industrial faculty, and would ask that that College be made the preferred creditor of the state in the immediate future development of the institution. I think we can now point to the one pledge fulfilled as far as we have gone, and we have gone just as far as we wisely could. I now unite with you in asking the most considerable sum, for any proposed development, for an Industrial College building.

The suggestions of Dean Bessey as to grounds, experiments, and collections I most heartily approve, and trust you may be able to carry them out in due time. It will be your urgent duty also to put the department of Horticulture and Botany on such foundations as not only to facilitate the best educational work on those subjects, but also to enable the professor in charge to go on with his original scientific work.

Your attention is called to the report of the Military Department. After two years' efficient service by Lieut. R. H. Townley, U. S. N., the department passes again into the hands of Lieut. Edgar S. Dudley, 1st U. S. Artillery. We are thus enabled to secure government arms and ammunition for drill and practice. It is desirable to keep this department in vigorous life not only because of our obligations to the National government but for its disciplinary and gymnastic value.

THE COLLEGE OF MEDICINE.

The entire history of this College falls within the period covered by this report. Agreeably to the organic law of the University and in response to an apparent public demand, the College was established by the Board of Regents on the 21st day of February, 1883, and a Faculty elected as follows:

ALBERT R. MITCHELL, M.D., Anatomy.
PAUL GROSSMANN, M.D., Surgery.
H. B. LOWRY, M.A., M.D., Physiology and Materia Medica.
WM. M. KNAPP, M.D., Obstetrics, etc.
HON. O. P. MASON, Medical Jurisprudence.
LYNN B. GRADDY, M.D., Diseases of Eye and Ear.
* L. A. MERRIAM, M.D., Principles and Practice of Medicine.

These gentlemen volunteered to serve the University without compensation, outside of necessary traveling expenses, for the term of two years.

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* Appointed June 13, 1883.

At a later meeting—June 13th, 1883—representation in the College was granted to the Homœopathic and Eclectic schools of practice upon the same conditions as above, and appointments were made as follows, namely: in Homœopathic specialties—

B. L. PAINE, M.D., Theory and Practice of Medicine.
C. L. HART, M.D., Materia Medica and Therapeutics.
F. B. RIGHTER, M.D., Obstetrics, etc.

And in Eclectic specialties—

W. S. LATTA, M.D., Theory and Practice of Medicine.
J. H. WOODARD, M.D., Materia Medica and Therapeutics.
*IRA VAN CAMP, M.D., Obstetrics, etc.

In addition to the professors named, Prof. H. H. Nicholson has served this College, as well as the other Colleges of the University, in the chair of Chemistry; and Dr. N. J. Beachly has been Demonstrator of Anatomy and Lecturer on Orthopedic Surgery. The following have also served as Lecturers:

ELIJAH M. WHITTEN, M.D., on Gynecology.
CHAS. M. DINSMOOR, M.D., on Therapeutics.
GEO. H. PARSELL, M.D., on Surgical Diseases of Women.
RICHARD CARSCADDEN, M.D., Organic Diseases of Chest.
MILTON LANE, M.D., on Materia Medica.
JOHN F. WAYMAN, M.D., on Physiology.

By a resolution of the Board, adopted June 13, 1883, candidates for the M.D. degree were required to be graduates of literary colleges or to pass a thorough examination in the common school branches and on a three years' course of lectures in medicine. It was the clear intention of the Board to fix a high standard of admission and graduation;

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* Appointed July 10, 1883.

but the rule has been modified in practice so as in effect to set aside any general entrance examination and to permit graduation at the end of two lecture courses. At your meeting in June last I had the honor to recommend, and the Board unanimously adopted, the following more specific and stringent regulations as to admission and graduation:

> 1st. That the terms of admission, amount of work, and length of course in the several sections of the College of Medicine be invariably the same.
>
> 2d That no student shall be credited with any course or courses taken in other colleges until his credentials therefrom, which must have been presented within one month after matriculation, have been passed upon by the faculty and accepted by the chancellor. * * *
>
> 4th. (To be in force from and after September, 1885.) Every candidate for admission to the College of Medicine must be eighteen years of age, and must present to the chancellor satisfactory evidence of good moral character. He must further sustain a satisfactory examination on the subjects required for a county superintendent's certificate of the second grade, with the addition of elementary chemistry, and by an examination on one or more of the required subjects, or by an essay of not less than 300 words on a subject assigned at the time, he must show ability to write the English language correctly. Graduates or matriculates of any other college of this University, or of any other reputable university or college, graduates of any high school or academy with a course of study equal to that of the Latin School of this University, may be admitted without further examination.
>
> 5th. No person shall be admitted to the degree of Doctor of Medicine under the age of twenty-one years, or without satisfactory proof of good moral character. The candidate must have completed a course of medical study continuing through three lecture terms of not less than six months each and including the study of practical anatomy and practical chemistry, and must have passed satisfactory examinations on all the studies of such course; but no person shall be admitted to examination on any study who has not attended at least four-fifths of the lectures and exercises thereon. Students from other medical colleges may be admitted to advanced standing on proof of compliance with the above or substantially equal requirements up to the point of entrance.

These rules have already had their effect as shown by the fact that most of the students entering this year do so for a three years' course.

Under the organic law of the University there can be but one College of Medicine and so but one Faculty. Practically, we have had to admit the existence of sections of this College and Faculty. All students are required to take the work of the general chairs—Anatomy, Physiology, Surgery, Chemistry, Medical Jurisprudence, Diseases of the Eye and Ear; while each is permitted to take the remaining work under the special professors of his own section. On the work of the general chairs, students of the Homœopathic and Eclectic sections are examined by committees chosen by the special professors of their respective sections from practitioners outside their own number.

The actual work of the College, in the face of so many difficulties and with so scant provision, has merited high commendation. The unpaid service of the Faculty, as a rule, has been characterized by zeal, diligence, and ability. For more detailed information as to the operations of the College I refer you to the appended report of Dean Mitchell.

The problem of permanent organization will soon be upon us. The experience of the past two years, during which the College has existed on an experimental basis merely, has been valuable not only as a demonstration that such a college has a wide and open field here but in emphasizing the need of a long look and large wisdom in laying its permanent foundations. The clashing of rival schools has put no little strain on the machinery; and if we are to move on successfully the strain on the new organization from this cause must be reduced. That something has been accomplished already may be inferred from the fact that the Chancellor, after consistently refusing to preside over any section of the Faculty, has this year had the unprecedented experience of presiding over a joint medical faculty including all the schools. I trust it may yet appear in Nebraska that the state need know no more of schools in medicine than of sects in theology. For the present we must handle stubborn facts with the proper combination of courage and wisdom. But even in the harmony of the 'schools' we shall have attained our end only in small part. The whole problem of medical education is on our hands. What can we do here to redeem the profession from low standards?—to make the M.D. degree a sufficient guarantee that its holder is fit to be trusted with the issues of life? Knowing well the strength of your determination to secure these ends, I do not now pause to discuss the means. That I hope to do adequately when the time comes for shaping the permanent organization. That this may be practicable, I shall ask leave of absence at a suitable time to visit some of the best medical colleges, especially those connected with other state universities, for observation and consultation. In this work I should be glad to have the co-operation of a committee of the Board.

THE UNIVERSITY AND THE PUBLIC SCHOOLS.

I have thus reviewed the condition and needs of the several colleges. But the one great want of the University as a whole is proper articulation with the system of public education of which it is the head. Until a thorough gradation is realized, making the way clear and straight from the elementary school to the University, the University cannot do its true and full work nor can the schools feel the wholesome influence from above upon their life and growth. There is needed a system of public high schools distributed over the state—at least one in every county ultimately—strong enough to train good teachers for the elementary schools, to finish a good practical English education for the youth who would be drawn to them from the county or a larger district around, and to prepare all who seek the higher education for college or the University. Such schools are the strength of the Michigan system, where all grades of public education are unusually strong and the University, standing in the very forefront of institutions of its class, fitly crowns the whole. This University, young and humble now, aspires to render a service no less high and far-reaching in the education of Nebraska.

Practically, several steps have been taken within the past year in this direction. First, a visit was made last winter to Iowa and Michigan to observe and inquire into the actual working of the systems in those states, the State Superintendent accompanying and co-operating with me in part; secondly, the whole subject was then presented to the State Teachers' Association in April, and to the Convention of Superintendents and Principals; thirdly, a joint committee of the latter body and the University Faculty drew up two courses of study—a *Major* grading up to the Freshman class, a *Minor* to the second year of the University Latin School—as a basis, and these courses were sent to the schools for their acceptance and adoption, with a view to entering into new and special relations with the University. Fourthly, eight schools have thus far adopted one or other of these courses, namely: Major Course, Beatrice, David City, Hastings, and Plattsmouth; Minor Course, Gibbon, Harvard, Hebron, and Sutton. Others notify us that they are working up to the mark thus set. Committees of the Faculty have been appointed to visit and inspect these schools, and if found equal to the work required, they will be placed on our 'accepted' list, and candidates holding their certificates or diplomas in evidence that they have successfully completed a course will be admitted to the proper standing in the Latin School or Colleges of the University without further examination. As an earnest of our spirit in the matter, we have at the opening of this year already honored certificates and diplomas of various High Schools by waiving our examinations in favor of their holders. This was done in case of pupils from Omaha, Kearney, Beatrice, Falls City, Brownville, and perhaps other places.

This is indeed only a beginning, but it is an auspicious and hopeful one. Every school now entering into this new relation will be strengthened by it, and will in turn strengthen all the lower schools in any way dependent upon itself. By developing these local centres we must inevitably raise the lower level of education throughout the state. By securing their wide distribution, so as to bring within easy reach of all our youth a fair secondary education, we shall open living streams to feed the University and all good institutions for high culture forever. In the effort to bring the University into vital and working union with the other schools we have to thank the State Superintendent, both officially and personally, for his cordial and effective co-operation, and like acknowledgments are due to many of our public school men.

I need not remind you that the Latin School was only created to prepare students for the University until this good time should come. When the possibility of a good college preparation is once brought nearer home to our youth in the proper course of a symmetrical public education, then it will be natural and best for the Latin School to cease, or to continue as one of the ordinary public schools of the state apart from the University. For the present, however, it remains a necessity, and it will be our wisdom to make it more and more exclusively a strong preparatory school. The natural growth of the public schools, it is hoped, will enable us gradually to drop the lower studies until its work shall begin a year in advance of where it now does; but there will be need simultaneously to advance the grade of our Freshman work, still retaining a two years' preparatory course.

THE LIBRARY.

I call your attention to the needs of the library. In but one or two departments at most is it adequate to our present actual, to say nothing of our potential, work. The University does not want a library for show, but for use. There is perhaps in no other institution so small a collection of books performing so manifold and constant a service. The library here is an intellectual laboratory. In it and the adjoining reading room much of the best work of our students is done. Scholarship is broadened and dignified by constant reference, beyond text-book and lecture, to authorities and sources. That only deserves the name of a liberal education which opens to the student a large view of literature, which puts in his hand the key to what has been written. The student who readily finds his way to what is best on his subject in a full library, and who has the training to draw from that best in satisfaction of his own want, is in the way of becoming a scholar. In default of this habit and power of reading many a college graduate goes out into the world *illiterate.*

A library, stocked with the best books in every department of knowledge, is as essential to our University work as is the living teacher, and it is high time for us to consider seriously this want. Our only Library Fund is the income from matriculations, amounting now to not more than $700 or $800 annually, and this must cover periodicals as well as books. Compare with this poverty the affluence of Michigan. Within the past two years her legislature has given the University $100,000 for a library building, and $15,000 for new books, to which private munificence has added the gift of a special Shakspeare library worth $5,000, and $1,500 in cash to increase the collection.

It seems to me that a wise economy demands now a purchase of books to the amount of $5,000 or $10,000 over and above the available Library Fund; and I suggest that you ask an appropriation for that purpose. It will also be necessary at the earliest possible day to enlarge the present accommodations, both in shelf room and sittings, and to provide more adequate library service. Prof. Geo. E. Howard, to whose report as Librarian I ask your attention, has done a good work in encouraging and directing the reading of students on certain lines, and to him is in great part due the large use of the few books we do possess. But it is impossible for any professor to carry the added burden of the active librarianship. At present efficient help is given by Mr. J. H. Holmes, a graduate student, and Mr. A. G. Warner, an undergraduate, for whose services a small compensation is paid. Ultimately the office of Librarian will be one of the first importance; but even now it is desirable to place this service on a better basis. A plan to this end will be matured before your annual meeting.

BUILDINGS.

Among other matters of general importance, I call your attention to the need of more room and facilities for our increasing work. At this time the whole University, with its tributary Latin School, has but one roof to cover it. In this one building is done the entire work of the preparatory, collegiate, and professional courses, aggregating nine years in length; and during the past year about 350 students were here pursuing these courses. The same building must house library, museums, and laboratories; must afford chapel, society halls, drill and calisthenic rooms, offices, etc., etc. To say we are crowded is not an over-statement. Moreover, the evil of throwing so closely together classes of students so diverse in age and aims is apparent. Laboratories are out of place in a general building, and a medical college more so. If it were to be permanent, the Latin School, too, ought by all means to be apart from the colleges.

Thus far the University has gone on doing its honest work and growing thereby. It is time now, in order that this work and growth be not seriously retarded, to rise and build. The need is patent and the means provided. With nearly $90,000 surplus of University funds in the state treasury, our own by gift of nation and state, we can go forward in our necessary development without any new tax on the public bounty. From this surplus, which I trust the legislature may cheerfully place at your disposal, we may erect and equip an Industrial College building and a Chemical Laboratory. The former would afford accommodations for all the chairs, save one, now attached to the Industrial College, with their lecture rooms, laboratories, and collections; and, until the development of the College is considerably more advanced, for the College of Medicine also. For this building we have a plan at an estimated cost of $50,000. It is needed for good work, and it will help much to give our industrial education its proper standing. The need of a Chemical Laboratory is one common to all the colleges of the University, and is sufficiently set forth in the appended report of Professor Nicholson. At a meeting of the University Senate on the 11th of November last, a resolution was carried urging action on your part and that of the legislature to secure such a building. During the past summer Professor Nicholson spent his entire vacation in studying the construction and equipment of the best laboratories in Europe. An acceptable plan has been sketched by a competent architect, and it is believed that a building now erected here would be likely to combine the best practical and scientific ideas yet worked out in this line.

With these two buildings erected and in use, the old building would afford ample room for the work that would remain; but it would need some remodeling and repairing. A sore need is that of a comfortable and attractive assembly room for the University and for many more public occasions. The present chapel is utterly uninviting—a place of penance for eye, ear, and back. But it is believed a few changes will work a transformation. The plan is to remove the present gallery, change the platform to the south end, turn the floor into an amphitheatre, run a gallery around the sides and north end, and put in a slightly arched ceiling. We should thus have, at an estimated cost of only $2,000, the best assembly room in the city, the Opera House only excepted. Such a room we need for manifold uses.

First, for our daily devotional gathering. Even under present adverse circumstances the attendance and attention at chapel are praiseworthy; with an attractive room, this one daily expression of our common life could be made much more helpful to us. Lectures, exhibitions, public meetings of societies, educational and other gatherings, such as the State Teachers' Association—for all these and many other occasions we need such an assembly room as the renovated chapel would make.

It would be possible also at slight cost to provide more commodious quarters for the library, and a large Principal's room for the Latin School, as well as to enlarge several recitation rooms now too small even for our present classes and give more adequate accommodations for art, music, and calisthenics.

Given these changes, with a new roof, fresh paint, and steam heating (the last a prime necessity on the score of comfort, economy, and safety), and the old building will render good service for many years to come.

GEOLOGICAL SURVEY.

It is the duty of the University, as head of the system of public education, and the State's chief agent for the advancement of science, to take the initiative in movements looking to scientific, social, or industrial progress. In this connection I beg to call your attention and that of the Legislature to the matter of a State Geological Survey. Nebraska is far behind her neighbors in this work, having done nothing whatever since her admission to the Union. That a survey would be of high value to science there is no doubt. Foreign scholars have come hither to settle by studies on our soil some of the great problems of geology, and to enrich their museums with the rare fossils of our unexplored *North-West.* We ought not in after years to go to New Haven or to French and German Universities to study the scientific treasures which now await the explorer in this region; but these, gathered into the museums of the University and our colleges, should remain of the permanent educational apparatus of the State. The industrial value of the survey is also to be considered. Aside from any possible development of mineral wealth, the attendant study of soil and climate, of rainfall and irrigation, would bring out the information needed to make our *terra incognita* inviting to the immigrant. The University urges the importance of provision for a survey now, to be made economically and gradually, but thoroughly, and stands ready for any service the State may require of her in the work.

GENERAL.

The University will be represented at the New Orleans Exposition. Its exhibit has been prepared by a committee composed of Professors Hitchcock, Sherman, and Hicks, and will include a brief historical sketch, books and other publications by members of the Faculty, themes and other work by students, etc., etc.

This year for the first time the University has published a general catalogue, enrolling not only its present officers, faculties, and students, but also the alumni and all who have been at any time connected with it as Regents, professors, or instructors. The new data were furnished by Professors Hitchcock and Howard, and will be revised and completed for the next issue. The improved appearance and quality of this catalogue are due to the taste and diligence of Professor Sherman, who assumed the labor of its preparation and publication.

Among many signs of intellectual life and activity in the University I mention the recent inauguration of two societies composed principally of professors, instructors, and graduates, and intended to promote independent and original research. The first of these has for its field History and Political Science; the second, Philology and Literature. Both have had successful meetings and promise to be of signal value as incentives to definite productive work and means to more intelligent co-operation on the part of those following cognate lines of study. A third society for the Natural and Physical Sciences is to follow.

It is a most pleasant duty to acknowledge my obligations to Professor Hitchcock, under whose guidance as acting Chancellor for the year and a half prior to my accession, the University enjoyed a quiet and steady prosperity, and whose experience and knowledge of the situation have aided me greatly in my own duties. I desire also to make mention of the fact that, during my several prolonged absences on official business last year, many of those duties devolved again on Dr. Hitchcock as Dean of the Academic Faculty, and were by him most cheerfully and efficiently discharged. On his declining a re-appointment to the office of Dean, after seven years' incumbency, you fitly entered upon your records a minute expressing your appreciation of his services—an expression in which I heartily concur. To Dr. George McMillan, present Dean of the Academic Faculty, I am indebted for like cordial and efficient support in my duties. Indeed, the entire Faculty have proved themselves such yoke-fellows in all good work as I could wish every other man, charged with like burdens and responsibilities, to have.

And finally to you, Gentlemen of the Board of Regents, my thanks are due for the confidence which has strengthened me in planning large things for the University, and for your steady and strong support in carrying them out.

Respectfully submitted,

IRVING J. MANATT.

INDUSTRIAL COLLEGE.

To the Chancellor of the University of Nebraska:

As the Dean of the Industrial College I have the honor of reporting to you, and through you to the Regents, the following suggestions for early consideration.

PURPOSE OF THE INDUSTRIAL COLLEGE.

In order that the work of the Industrial College may be definitely laid out, the purpose of the school must, in the first place, be clearly and exactly defined. Ever since the passage of the law of Congress which gave existence to the Industrial Colleges of the states, there have been different interpretations of its purpose. On the one hand it has been held that the colleges founded under this law should instruct mainly in practices, and that on this account they should become manual labor schools in which every operation in the shop or on the farm and garden should be practiced by the pupil until he becomes a skilled workman. This was the earlier view, and many of the state colleges were started upon this plan. It was thought that by spending each day a certain number of hours in study, and a certain number in manual labor, the pupil could at the same time acquire an education, and become proficient in all manual operations. Accordingly, in connection with such schools there were established gardens and farms, upon which the attempt was made to carry on all-kinds of horticultural and agricultural work.

None of the schools founded upon this plan have met with the success which their projectors anticipated. It is impossible in this age, when the principle of division of labor is carried into every industry, to make a garden which shall illustrate every branch of horticulture, nor can the state bring upon a single farm the many operations which are now divided amongst the many classes of husbandry. Neither have such schools been successful in their endeavor to make skilled workmen in every department of agricultural and horticultural industry. A smattering only has been obtained by the pupil in this attempt to make of him a "Jack-at-all-trades." The time allotted is too short for a young man to obtain at once an education and a manual training in all the operations of the garden and the farm; and moreover, if it were possible, it would not be desirable to train young men upon a farm or garden whose conditions were so entirely different from those of the ordinary farms and gardens of the state.

The intent of the congressional law, as indicated by its wording, and as now understood by the majority of the educators of the country, was doubtless to provide for colleges in which should be fostered the great sciences which underlie agriculture and mechanics, as literature and the classics are fostered in the ordinary colleges. According to this view, it should be the purpose of this college, first, to teach thoroughly those branches of learning which are related to agriculture and the mechanic arts, and in this manner to lay a firm foundation for the subsequent study of the application of these branches to the practical work of the farmer and gardener. The student must first acquaint himself fully with the problems which have to do with the life, growth, and reproduction of plants and animals, with the structure, origin, and composition of the soil, with the varying conditions of the air, and in general with the great forces of nature, with which he is constantly surrounded, and by which all his labors are controlled. Such an acquaintance must be made by a study and investigation of things themselves in the laboratory and the field. The student in this school must have a *personal acquaintance* with the subjects of his study. It is not enough that he should learn what others know about a plant, or an animal, or the soil, etc., etc. He must, by observing and studying the thing itself, be enabled to build up a mass of knowledge at first hand, for this alone will serve him when he comes to applying his knowledge to practical operations.

These are the views toward which the educators of to-day are moving and to which all the industrial colleges are tending. In urging these views upon you as those which should shape the policy of the Industrial College of this University, I have no doubts whatever as to their correctness. In this I am happy to say that I have expressed the feeling of the majority, if not all, of the Industrial Faculty, who heartily agree with what is set forth above. I trust that you will ratify and sanction these views by adopting such a policy as will place this college in advance of all others of its kind; requiring of its officers that they provide the best possible instruction for laying a broad foundation for a thorough education; requiring of its students such diligence in the study and observation of things as will not only give them knowledge, but also, what is of greater value, the power of increasing their knowledge.

THE COURSE OF STUDY.

If we are agreed upon the general policy of the Industrial College, its course of study must then be made to consist in the main of the modern sciences, with an abundance of laboratory and field work. There must of course be the proper amount of time given to preparation. The young man who hopes to enter upon the work of scientific agriculture must not be hampered by poor preparation. He must be able to consult European books and periodicals in his researches, and, moreover, he must be able to communicate his knowledge in such terms as will at once be intelligible to all, and command the respect of the educated classes everywhere.

So far, however, as the main purpose of the course is concerned, it should give attention to the elements of the sciences first, and then as the student advances, he should be required to take up the great problems in these sciences which have a bearing upon the operations of practical farming or gardening.

The graduate of such a course should be admitted to the degree of Bachelor of Agriculture, just as the man who has pursued the ordinary college course is admitted to the degree of Bachelor of Arts. Neither one is supposed to be master of his subject; he is but a bachelor, and goes out from the college with only a preliminary training. His work begins with the end of his undergraduate course, and by such work must he earn his Master's degree.

If we graduate the student who has taken a course in the underlying sciences in connection with laboratory and field practice, admitting him to the Bachelor's degree, we should then provide a second degree—Master of Agriculture—for those Bachelors who afterwards can show not less than four years of successful and progressive farming. The Industrial Faculty should prescribe courses of reading and study in connection with such practical work, so as to foster the habit of keeping abreast of the advances made in his profession.

OF EXPERIMENTS AND OBSERVATIONS.

There are two classes of experiments and observations, viz.: 1st, those which are popular in their character, and which aim to reach immediate results; and 2d, those which are scientific in character, in which the aim is to discover some profound principle, or to establish beyond dispute some fact in nature. The popular class of experiments includes those in which the relative productiveness of different varieties of plants is tested; those by which new varieties are brought into notice; those in which the relative values of different implements and tools are tested, etc., etc. Such experiments have a value, and when properly conducted a high value, but their value in any case is limited to narrow areas, and affected by many and constantly changing conditions. In proof of this, allow me to cite you to any of the published reports of such tests or experiments made, say, ten years ago. They have now in most, if not all, cases entirely lost any value they may once have possessed. No one to-day would be guided in his selection of the best potato for planting, or the best reaping machine for use in his fields, by the results obtained a dozen years ago, especially if made in another part of the country. Experiments of this nature have a fugacious and local value; however, they may for a short time and in restricted areas have a very high value.

The experiments and observations of the other class require much more time and care for their consummation, but their results when obtained have an accuracy and a wideness of application which give them a high value for all times and in all places. It would be well to draw a sharp line of demarkation between these two classes of experiments and then to adopt a fixed policy with respect to each. From the fact that those of the second class generally require delicate and expensive apparatus with frequent observations and records, they are best performed by men who have been especially trained in such work. Here small plots of ground are required, but they must be of ready access.

Experiments of the first class require, as a rule, less apparatus, and what is necessary is always less delicate and much more easily used. Here, however, ground space is necessary, and consequently considerable field areas must be at the disposal of the experimenter.

I should like now to urge upon you the desirability of instituting a series of experiments in the several departments of the Industrial College. If we look over these departments of the University, we can readily see that they possess facilities (at least in part) for conducting experiments of both the classes above referred to, and I should regard it as the wisest policy on the part of the Board of Regents to institute carefully selected experiments of both kinds.

In determining what work shall be taken up first and given the greater prominence, several considerations must not be overloooked, viz., that experiments of the one class are constantly being made by private enterprise, by individuals and societies in all parts of the country. Thus every new variety of plant receives early and thorough trial at the hands of enterprising growers, and their verdict, based as it always is upon the profitableness of the variety, is and must be final.

On the other hand, private enterprise, as a rule, does not concern itself with those experiments which give no promise of immediate results. There is therefore greater need that the college undertake the work of the latter kind. This need is emphasized when we consider the fact that the college alone can command the apparatus and the trained men necessary to the successful prosecution of these difficult experiments, while by proper guidance every farmer and gardener in the state can do good work in the other line of experimentation.

With these considerations before us, I beg to submit the following scheme of experimentation:

I. POPULAR EXPERIMENTS.

The Regents to institute such experiments upon the College Farm as they and the Superintendent of the Farm shall deem of most importance. An annual report of these shall be made by the Superintendent to the Regents for publication.

Topics. 1. Experiments with stock as to breeding and feeding.

2. Experiments with various kinds of grain crops.

3. Experiments with various kinds of grasses and other forage plants.

4. Experiments upon different modes of culture for various crops, etc., etc., etc.

II. SCIENTIFIC EXPERIMENTS.

The Regents to institute in the laboratories, and upon suitable grounds set apart for the purpose when necessary, several series of experiments and observations by or under the charge of the professors in the Industrial College. These experiments should in most cases be instituted for terms of years.

The professors should be required to make a careful report of progress at the end of each year to the Regents for publication, and at the end of the term of the experiment, or when definite final results have been attained, a final report shall be made in each case, with summaries and conclusions.

Topics. 1. Full meteorological observations (continuous).

2. Observations upon soil temperature (five years).

3. Observations of the humidity of the soil (five years).

4. Observations upon the percolation of water through soils (five years).

5. Chemical and physical analyses of soils (. . years)

6. The fertility of soils as related to the texture and composition of the subjacent strata (. . years).

7. The porosity or compactness of soils as affected by cultivation and by burrowing species of worms, insects, and rodents (. . years).
8. The necessity and practicability of irrigation in various parts of Nebraska (. . years).
9. The observation and study of the injurious insects of the state (five years).
10. The observation and study of the injurious fungi of the state (five years).
11. Experiments upon fertilization and cross-fertilization of plants (. . years).
12. Experiments upon the proper temperatures for the germination of seeds (five years). Etc., etc., etc.

In conversation with the professors in the Industrial College, I find a willingness to undertake such work of this kind as may be instituted. I need hardly remind you, however, that the work laid upon each man should not be burdensome, as the overworked, hurried man cannot make exact experiments or accurate observations.

ILLUSTRATIVE COLLECTIONS.

The Industrial College needs various illustrative collections, and steps should at once be taken toward supplying these. Their value to the Industrial student is beyond measurement, but they may be of high value to the students in the other departments also, and if properly arranged they may become a source of instruction to the people of the state who visit them.

The following are some of the collections necessary:

1. A Botanic Garden, in which shall be grown all the trees, shrubs, and herbs which will endure this climate. These should all be plainly labeled. A block of ground in the city within easy reach of the University would be amply sufficient.

2. A Forage Garden, consisting of plots containing all the forage plants of temperate climates.

3. A Grain Garden, consisting of plots containing all the grains of temperate climates.

4. Collections of dried packages of all the grasses and forage plants of the world, arranged in the Agricultural Museum.

5. Collections of dried packages of all the grain-producing plants of the world, arranged in the Agricultural Museum.

6. Collections of samples of the grains, seeds, fruits, and vegetables of the world (natural and in wax casts), for the Agricultural Museum.

7. Collections of the woods of the world, in blocks and samples of manufactures.

8. Collections of the various soils of the state and country.

9. Collections of the building stones of the state and country.

10. Collections of the insects and other animals injurious to the plants and animals of the farm.

11. Collections of the fungi injurious to the plants and animals of the farm.

12. Collections of the tools and implements used in farming and gardening, etc., etc., etc.

Trusting that you will give to the suggestions herein contained such consideration as will enable you to decide upon their merits, I beg to subscribe myself,

Very Respectfully Yours,
CHARLES E BESSEY,
Dean of the Industrial College.

University of Nebraska, Lincoln, Dec 16, 1884.

COLLEGE OF MEDICINE.

To the Chancellor of the University:

In this, my first biennial report, it is my pleasure to inform you of the harmony existing in all departments of the College of Medicine, a condition not common in mixed schools.

In February 1883, the Board of Regents, in compliance with an existing demand, organized the College of Medicine by the election of a complete corps of instructors, assigning to each chair a certain number of lectures, based on the course given in the University of Michigan, the courses in the several departments being as follows:

Anatomy, 90 lectures.

Physiology, 40 lectures.

Materia Medica, 40 lectures.

Obstetrics and Diseases of Women and Children, 80 lectures.

Principles and Practice of Medicine, 80 lectures.

Chemistry, 65 lectures and practical work.

Eye and Ear, 20 lectures.

Medical Jurisprudence, 20 lectures.

Principles and Practice of Surgery, 80 lectures.

The professors elected to the several chairs, in the interest of the University, pledged themselves for a period of two consecutive years to perform the services required without remuneration, except for necessary traveling expenses. With one exception the services were performed, that exception being the chair of Surgery. The full course in this department, however, was completed by the Professor of Anatomy and the Lecturer on Orthopedic Surgery.

For the session of 1883 and 1884, eighteen students were enrolled as matriculates of the College of Medicine. There was, however, a daily attendance of fourteen. Four of this number were candidates for graduation, having been in attendance upon medical lectures in other institutions, and having passed the required examination admitting them to the Senior class. The degree of Doctor of Medicine was conferred upon three of the gentlemen presenting themselves.

The expenses incurred were exceptionally light, considering the amount of material necessary in the beginning and the great cost and difficulty in securing material for practical anatomy. A complete statement of these expenditures is in the hands of the secretary of the Board of Regents.

The rooms set apart for the use of the College of Medicine, although wanting most conveniences, have served their purpose well, and students as well as instructors have accepted the situation, and looked upon their narrow quarters as the nucleus of a future development.

After the organization of the College of Medicine, in response to a petition extensively circulated and signed, the Board of Regents extended to the members of the Homœopathic Medical school the right of representation, by the the election of three professors, one of Theory and Practice of Medicine, one of Obstetrics and Diseases of Women and Children, one of Materia Medica. This was the representation claimed, and probably wisely granted, although the statistics of 1881 and 1882 show but fifty Homœopathic practitioners in the state, while there are 450 regular physicians. The several professors elected to fill the chairs above named were faithful in the discharge of their duties.

Eighteen students were enrolled as matriculates of this department; the regular daily attendance being sixteen.

The degree of Doctor of Medicine was conferred upon three candidates.

At the time of the Homœopathic organization, the Eclectic School made application for representation and were granted the same rights with the Homœopathic school—the chairs filled being the same as before mentioned. The lectures were given throughout the year by the respective chairs, although the number in each branch has not to my knowledge been fixed.

It is with some delicacy that I would earnestly request the Hon. Board of Regents to investigate the claims entitling the Eclectic School to representation.

In this department there was an enrollment of nine students, with an average daily attendance of nine. The degree of Doctor of Medicine was conferred upon one candidate.

SESSION OF 1884 AND 1885.

While greatly encouraged by the success of the first year's work, we have in the present outlook substantial evidence of the demand existing for a College of Medicine in connection with the advanced educational institutions of our State, and under the rigid discipline of the laws of the State; also, of the wisdom of the board in meeting this demand by the organization effected.

For the session of 1884 and 1885 there are enrolled as matriculates in the College of Medicine thirty students, with a regular daily attendance of twenty-six, almost double the number in attendance the year preceding.

It is also very gratifying to state that it is found, by comparing the marking of the present year with the year 1883–4, there is an increase of about 20 per cent. The professors in the several departments, with two exceptions, have filled the required number of hours, the two exceptions being unfortunately the chair of Principles and Practice of Surgery, and Clinical Surgery, which are often filled by one professor, as in the Michigan University.

The chair of Clinical Surgery has been well filled thus far, only a few absences having occurred. In the very important department of Principles and Practice of Surgery but five lectures have been given during the course. It will require something more than four lectures a week from this time to complete the course of eighty lectures. I make this matter a part of my report to you, as I consider it of vital importance.

The lecture room, so kindly granted us in the beginning, has been enlarged, and has now a seating capacity for one hundred students. Until the Board can furnish more commodious accommodations the College of Medicine will make the best of their present quarters.

More complete apparatus is needed to assist in the work of instruction, but especially is room essential to more satisfactory work. The rapid increase in our numbers, I am confident, is the only argument necessary to convince those in power of our future probabilities, and consequent necessities, and especially is this true in the department of Chemistry.

In the Homœopathic section of this College there are enrolled 18 students, with an average daily attendance of 16.

The chairs are filled as in 1883–4. I do not know that any fixed number of lectures is required. I would suggest the propriety of such an arrangement, if it does not now exist. It will be observed that the average attendance is high.

There are enrolled as belonging to the Eclectic section 9 students, with a regular daily attendance of 9. Several of the students made application for admission to the regular class at the beginning of the term, but withdrew in a short time, and re-entered the Eclectic class.

Two chairs only have been filled by professors elected by the Board of Regents, Prof. Van Camp having resigned before the opening of the session. And in this connection I may remind you that this section opened its course some three weeks after September 9th.

In conclusion I have only to say that the College of Medicine, in the face of obstacles known only to medical men, has prospered beyond the hopes of those most concerned in its prosperity. With this year closes the generous contract entered into at the time of organization. All those (with the noted exception) who entered into it have performed faithfully, at great financial sacrifice, the duties they pledged themselves to perform, and with a full sense of the responsibility resting upon them.

I can only hope that the seed now sown may not be neglected.

Very respectfully,
A. R. MITCHELL,
Dean.

DEPARTMENT OF MATHEMATICS.

To the Chancellor of the University:

I would respectfully report, that the only material change in the course of study in the mathematical department of the University made during the past two years is placing Plane Geometry among the branches required for entrance.

This gives more time for exercising the students in original work, and hence there has been a marked increase of interest and of success in such work. Very many creditable specimens of original demonstrations of geometrical truths have been furnished. The *highest* grade is given to those only who show ability in such work.

COURSE OF STUDY.

The course of Mathematical study in the University now embraces Solid Geometry, Conic Sections, Trigonometry—Plane and Spherical, Higher Algebra, Analytical Geometry, and Calculus.

The entire course is pursued only in the Scientific course. The mathematics of the Literary course extends only through Plane Trigonometry; that of the Classical course through Analytical Geometry.

The last two years of the Engineering course are devoted wholly to those branches of applied mathematics essential to such a course.

Number of students in the college classes in pure mathematics during the years 1882–3 and 1883–4.

1882–3.

Solid Geometry and Conic Sections	25
Plane Trigonometry	22
Higher Algebra	8

Spherical Trigonometry	5
Analytical Geometry	4
Calculus	5

1883–4.

Solid Geometry and Conic Sections	24
Plane Trigonometry	17
Higher Algebra	7
Spherical Trigonometry	7
Analytical Geometry	5

FALL TERM OF 1884–5.

Solid Geometry	30
Higher Algebra	11
Calculus	4

Number of students in the classes in Mathematics in Latin School, 1882–3 and 1883–4:

1882–3.

Arithmetic	56
Elementary Algebra	70
University Algebra	24
Plane Geometry	19

1883–4.

Arithmetic	98
Elementary Algebra	79
University Algebra	46
Plane Geometry	45

FALL TERM 1884–5.

Arithmetic	59
University Algebra	48

H. E. HITCHCOCK,
Professor.

DEPARTMENT OF GREEK.

To the Chancellor of the University:

I beg leave to submit the following report of the Department of Greek for the years 1882–4:

The number of students in Greek in the College classes and in elective courses was thirteen for the year 1882, and seventeen for the year 1883, making a total of thirty.

FRESHMAN CLASS.

The course for the first year includes a study of the Anabasis and one of the orations of Lysias, with Greek prose composition, special attention being given to the forms including the laws of accent, and to a mastery of the leading principles of syntax.

SOPHOMORE CLASS.

The Sophomore year is given to the study of the Homeric poems with reference to a critical knowledge of the Epic dialect and an acquaintance with Greek Mythology. Herodotus is read for the New Ionic, and as an introduction to the Greek Historians. A portion of Thucydides is read for drill in elliptical and difficult constructions, and as a preparation for the study of the history and literature of the age of Pericles. Selections are also read from Xenophon's Memorabilia, with exercises in writing prose.

JUNIOR CLASS.

The Junior year is occupied with the study of Greek oratory, tragedy, and lyric poetry. The Philippics of Demosthenes, or their equivalent, are critically read, accompanied by instruction in Athenian politics and Grecian antiquities. The work in dramatic and lyric poetry consists in the study of a play of Sophocles, of the odes of Pindar or the Idyls of Theocritus, with a survey of the literature included in the year's reading.

SENIOR CLASS.

The course in this year is wholly elective. In selections from the orators, from tragedy and comedy, and in readings from Plato, with a study of the Greek Philosophers, it is the aim to give the student a comprehensive knowledge of Greek literature, and to show him the power of the language as an instrument of thought.

Throughout the course the reading of authors in class is accompanied by lectures, introductory and exegetical, on Greek literature and antiquities. Under the direction of the professor students are expected to pursue courses of reading in Greek history, literature, and philosophy, for which the University library affords facilities. It is the aim of the instruction, by careful attention to form, syntax, style, and thought, to make critical and exact scholars, to secure the best discipline and culture which a faithful and intelligent study of the Greek language and literature is pre-eminently fitted to give.

GEORGE McMILLAN,
Professor of Greek.

University, November 26, 1884.

DEPARTMENT OF LATIN.

To the Chancellor of the University:

SIR—I have the honor to report the following upon the condition and needs of the department under my charge:

There has been no material change in the course of study since I assumed control of the Latin chair. Owing, however, to the cutting off of two terms in Latin in the preparatory department just previously to my coming to the University, a slight modification in arrangement of studies was made necessary. Vergil has been brought up to the Freshman year, as it was deemed impossible in the two years of the Latin School to do more than the introductory work and read Cæsar and Cicero, accompanied by some lessons in composition. It seemed to me that the four terms previously devoted to Horace could be better expended in part elsewhere. Hence two terms were taken from that author, an additional term was given to Livy, and Sallust and Terence have been added to the required studies.

In instruction my aim has been mainly to do College work The required course is too short to do more than lay a foundation for University work proper, in a post-graduate course. If students would more generally elect Latin in the Senior year, they could be assigned to more advanced work, but I have been reluctant to encourage such election because of the meagerness of the Classical course in other lines of study, such as German, History, and Natural Science, all of which should in part constitute a liberal education before the student begins his special University work. My first purpose has been to inculcate an ability to read Latin rapidly, and to interpret the author directly, without the medium of the English. I have sought to give the student a practical knowledge of the language first, and then to work to a more critical understanding of the idiom. Thus I have attempted to make critical work and close grammatical distinctions a finishing process rather than a first means of study. So soon as a student gains a fair vocabulary of an author, and a working knowledge of the more common grammatical principles, largely taught orally, he is put to practice at sight reading, and is encouraged to use this method in preparing his lessons. He is asked to discover his own rules, so far as he can, and the habit is inculcated of making each lesson a lesson in induction. This is finally supplemented by set grammatical tasks. From several years' experience and observation I am fully persuaded of the superior value of this order of procedure, and that the late methods coming into use in the study of modern languages with such marked success can in part be employed in the study of Latin with very gratifying results.

To enable me more fully to carry out the methods above indicated there are needed a few books for class-room use.

1. A few texts of the easy, not usually read, authors for practice at sight reading in class.

2. A few copies of the less common authors for collateral reading on subjects connected with the author read in class, the collateral reading to be carried on outside of the class work, and stated examinations to be given upon it.

3. Text editions of the regular authors read. These to be kept in the class room for the students to recite from, while they leave their annotated editions, from which they have prepared their lessons, at their rooms.

With these helps I could hope to lay the foundation of some profitable library work. The books needed are not expensive. I express the hope that the Regents may soon find it possible to make a small appropriation for the above purposes.

In conclusion, allow me to say further that I should be glad to see the classical course so enlarged as to admit German and Ancient History.

G. E. BARBER.

DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE.

To the Chancellor of the University:

In the department of English some improvements have been introduced since the last report. In the Literary course, where all the regular studies of this department are prescribed, the work includes a complete view of the historical development of English as a language, as well as of its literature. In the Freshman year the general history of the Indo-European languages is pursued as far as the beginnings of Anglo-Saxon, or First English. In the Sophomore year Anglo-Saxon is studied, up to the middle of the second term, in the prose of Ælfric and Ælfred, and in Cædmon and Beowulf; then the student is carried forward in Early English to the period of Chaucer. In Junior year follows the general survey of English literature from Chaucer to the modern period, together with special study of chief authors, origin of various schools, and influence of other literatures. These three years of preparation fit the student for special studies in style, criticism, and comparison of literatures in the Senior year.

As electives, in order to more complete study of certain stages included in the preceding, are offered two terms in Special Authors in Early English; or Study of the English Dialects; one term in American Literature; and to graduate students and others who wish to study the earlier history of the language, courses in Sanskrit, Gothic, and English Philology. It is proposed to offer also next year a special course in Shakespeare, in connection with which students will be prepared to compete for the prizes offered by the Shakespeare Society.

In the important study of Rhetoric and English Composition, which is yet attached to the department of English Language and Literature, new and, as it is believed, improved methods are in operation. This year the student, after being shown by precept and model how he should write, is set the task of producing something which shall exemplify the methods and standards indicated. Text-book work is not discarded, but the study is conducted with reference to practical skill rather than theoretical rules and directions,—as an art rather than a science; and in a class numbering about fifty, good results are already realized.

In the Latin School also the same plan has been put in operation with the class of the First Year. Grammar and Composition are taught in practice lessons, instead of rules, and the student trained to detect and avoid errors in speaking and writing. Especial attention is given also to correct pronunciation.

The work of the department, exclusive of the themes required from all students in regular courses, from Sept., 1883, to the close of the present term, has been distributed as follows:

COLLEGE YEAR, 1883–4.	No. of Students.
Rhetoric	17
Logic	16
Anglo-Saxon	17
English Literature	13
Advanced English Literature	6
Graduate Course Gen'l Lit.	1
Shakespeare	2
Preparatory Course in English	80
FALL TERM, 1884.	
Rhetoric, Sophmores	22
Rhetoric, Freshmen	27
Anglo-Saxon	13
English Literature	15
Preparatory English	70

The needs of the department are two: a proper assistant who can relieve the professor of English of all teaching in preparatory classes and in Rhetoric, and aid in the reading and correction of students' themes; and an adequate library apparatus for the literary and text studies of Sophomore, Junior, and Senior years. To provide the latter will require the addition of 500 to 1,000 volumes of standard texts and authors to the works already in our library. With these wants supplied, the work done here in the department of English should not be inferior to that of any College in the country. It is believed no better arranged course in English is in existence anywhere.

Respectfully submitted,
L A. SHERMAN.

December, 1884.

DEPARTMENT OF GEOLOGY AND ALLIED SCIENCES.

To the Chancellor of the University:

DEAR SIR—In compliance with your request, I submit a brief report of my department.

By the action of the board of Regents at their meeting in June, 1884, the chair of Natural Sciences was discontinued, the duties pertaining to it having been already assigned in part to the Professor of Chemistry and Physics, and what remained being now divided between two new chairs, namely the chair of Geology and Allied Sciences, and the chair of Horticulture and Botany. To the former of these I had the honor to be appointed, and it is of the work in this new department of Geology and Allied Sciences that I shall attempt to give a summary account.

I have carried on the usual work of instruction in Geology and Biology. In the former study the members of the class have been encouraged to avail themselves of the excellent facilities offered in this new and almost unexplored State for independent and original work. Several of them have commended themselves as zealous and successful collectors, and give promise also of speedily acquiring the requisite ability to solve some of the doubtful or undetermined problems of stratigraphical geology in this state. In Biology, considerable practical work has been done with the microscope, particularly in the way of systematic experiments upon Abiogenesis or Spontaneous Generation. The timely addition to our supply of apparatus of a dozen new microscopes, manufactured by Henry Crouch, of London, enabled the class to prosecute these researches. We have also devoted considerable attention to the homologies of the vertebrate skeleton. Nicholson's Biology has been used in daily recitations the greater part of the term.

In the way of field work, I have visited many localities in eastern and central Nebraska, and have acquired a general knowledge of their formations.

THE CABINET

More room, more light, and a general re-arrangement of the specimens and verification of the labels are necessary in order to impart to this collection that high degree of attractiveness and utility which it ought of right to possess by virtue of the wealth of its materials, if these were properly classified and displayed. Of these requirements, the first two, more room and better light, are radical and paramount. It is hardly worth while to begin the re-arrangement and verification until the collection is better housed.

I would respectfully call attention to the obvious fact that the immense labor of re-arranging, verifying, and cataloguing the present collection, as well as receiving and arranging the collections of the geological survey, will make it necessary to appoint a Curator, who may also be an instructor in Geology, Mineralogy, and Paleontology, but who shall be charged with the care of the Cabinet as his main business.

The following additions have been made to the Cabinet:

1.	Specimens collected by the class in Geology and by myself during the fall term, mostly fossil mollusca and leaf-prints	123
2.	Presented by Mrs. W. Turtle, of Chicago, a collection of shells, barnacles, star-fishes, corals, sea-weeds, etc., from various localities on the Pacific coast	52
3.	Presented by myself from collections made in the eastern states and in Europe	
(*a*)	Silurian fossils of Pennsylvania and Ohio	75
(*b*)	Devonian " " "	90
(*c*)	Subcarboniferous fossils from Pennsylvania, Ohio, Indiana, and Iowa	228

(*d*)	Carboniferous fossils from Pennsylvania, Ohio, West Virginia, Illinois, France, Belgium, and Germany	74
(*e*)	Jurassic and Cretaceous fossils from England, France, Germany, and Switzerland	57
(*f*)	Miocene and Pliocene fossils of France and Belgium	19
4.	From various sources	18
	Total	736

Respectfully submitted,

L. E. HICKS.

DEPARTMENT OF HISTORY.

To the Chancellor of the University:

I have the honor to submit to you the following biennial report of the work of the Department of History.

The most important innovation during the period has been the gradual introduction of the co-operative plan of study into all grades, inclusive of the second preparatory year.

The co-operative method consists in the assignment of topics for special investigation on the part of each student. The work is done by the latter in the library, which he is thus led to regard as his laboratory. On a day previously designated, he presents the results of his investigations before the class.

Usually either a "lecture" or a "theme" is required of every student each term; but frequently a longer time is allowed for the preparation of a theme.

The lecture is delivered extempore, but a written brace-analysis of the subject, accompanied by the list of authorities consulted, is submitted to the instructor, and also placed upon the blackboard before delivery of the lecture.

It is expected that each theme, in addition to the brace-analysis and the bibliography, will contain at least one carefully elaborated thought or thesis. In fact it is designed as a training both in the form and the style of the historic monograph.

This system of co-operation is united with the use of text-books and conversational lectures by the instructor on the entire subject of the course.

The results of the experiment, even in the lower grades, are most satisfactory. This method intensifies the interest, develops the analytic and reasoning powers, broadens the view, creates a spirit of enquiry, and produces a healthy tendency to specialization. It is the natural and legitimate preparation for the future productive work of the Seminary and the Association.

In the development of organization, the department has gained several new features. First is the Theme bureau. In this are preserved copies of all themes and lecture synopses. It is hoped that this plan will tend to produce thoroughness; and the analyses and reference lists will be utilized in future class work.

Second is the Newspaper bureau. This comprises two features: first, clippings from current journals, classified under a great variety of general and minor titles, embracing the whole field of history, economy, literature, science, the arts, etc. This feature was suggested by the newspaper bureau of the Johns Hopkins University. Second, files of representative newspapers, state, national, and foreign, to be indexed and bound in volumes as they accumulate. Only a beginning has yet been made, but it is hoped that eventually the bureau will supply useful material for the independent study of contemporary and especially local history.

The last and crowning feature of the organization is the share of the department in the recently formed "Association of History and Political Science." In connection with this Association, provision is made for a Seminary of post-graduates studying for a degree. It is expected that with the beginning of the fall term of 1885-6, several candidates will offer themselves as regular Seminary students.

For the year 1884-5 an elective course in American political and constitutional history has been added. It will be the aim of the department to offer other and special courses in American history as soon as practicable, even if it be found necessary to drop electives on other subjects now offered. But at present the library facilities in this branch are entirely inadequate to the work already begun.

It is worthy of mention that the character of the work done by the Freshman class of the current year is much superior to that of any previous class. It is, doubtless, wholly attributable to the thorough preparatory training in history, which, during the year 1883–4, was for the first time provided.

The following table will furnish you with exact details in respect to the character, amount, and distribution of the work for the academic year 1883–4:

FALL TERM.

SUBJECTS	CLASS	Hours a week	No. students enrolled	No. taking as a prescribed study	No. electing	No. examined	No. failing or conditioned	REMARKS
Taught by Geo. E. Howard:								
1. Ancient Law	Senior	3	4	3	1	4	....	
2. Institutional History	Elective	2	4	....	4	4	....	Supplementary to Ancient Law; Themes and lectures by members of the class.
3. Ancient History	Freshman	5	27	15	12	19	2	Reports and lectures by students; six excused without grades.
4. Early Empire	Sophomore	5	8	7	1	8	....	Themes on subjects connected with Roman Administration and Towns.
Taught by H. W. Caldwell:								
1. Protestant Revolution and Thirty Years' War	Junior	3	6	3	3	4	....	Each student presented either a theme or a lecture.
2. Renaissance in Literature and Learning	Elective	2	3	....	3	3	....	Class taught by lectures; each student presented a theme and a lecture.

WINTER TERM.

SUBJECTS	CLASS	Hours a week	No. students enrolled	No. taking as a prescribed study	No. electing	No. examined	No. failing or conditioned	REMARKS
Taught by Geo. E. Howard:								
1. Constitutional History	Senior	3	4	3	1	4	....	
2. Special Studies in Church Institutions	Elective	2	4	....	4	4	....	Taught by lectures and blackboard exercises; each student a theme.
3. French Revolution	Elective	2	1	....	1	1	....	Theme and lecture by student.
4. Middle Ages	Sophomore	3	8	7	1	7	....	
5. Ancient History	Freshman	5	13	9	4	11	....	Lecture on Special Topics by each student

Taught by H. W. Caldwell:								
1. Puritan Revolution	Junior	3	6	4	2	6	......	Themes.
2. Renaissance in Art	Elective	2	2	......	2	2	......	Class taught by lectures and by the co-operative method; no text book.
3. General History I. Division	Second Prepara'y	5	13 } 40	13 } 40	......	10 } 37	5 } 12	Special subject assigned for students to read and report on in class; each member prepared an essay on Roman Const
4. General History II. Division	Second Prepara'y	5	27	27	......	27	7	

SPRING TERM

Taught by Geo. E. Howard:								
1. Const. History	Senior	3	3	3	......	3	......	Conducted by lectures and brace-synopses with use of Stubbs, Hallam, etc.
2. Special Studies	Elective	2	3	......	3	3	......	Lectures on Church Institutions and on Constitutions of France and the German Empire.
3. French Revolution	Elective	2	1	......	1	1	......	Theme.
4. Middle Ages	Sophomore	2	6	6	......	6	......	A special study of Feudalism.
5 Ancient History	Freshman	5	9	8	1	8	......	Each member a lecture in class
Taught by H W. Caldwell:								
1 Age of Anne	Junior	3	4	3	1	4	......	Theme.
2. English History	Second Prepara'y	5	7	7	......	7	......	Lectures, themes, etc., in addition to text book.

December 15, 1884.

GEO. E. HOWARD.

DEPARTMENT OF CHEMISTRY AND PHYSICS.

To the Chancellor of the University:

I present herewith the report of the department of Chemistry and Physics for the two years ending Nov. 30th, 1884.

During this period there have been enrolled in the classes of this department two hundred and twenty-nine students, divided and classified as follows:

1882-3.

General Chemistry—Sophomore	5
Analytical Chemistry—Sophomore	3
General Physics—Junior	14
Elementary Physics—First Preparatory	53
Elementary Chemistry—First Preparatory	32
	107

1883-4.

General Chemistry—Sophomore	10
General Chemistry—Medical	21
Analytical Chemistry—Sophomore	7
Analytical Chemistry—Medical	5
Analytical Chemistry—Junior	1
Elementary Physics—First Preparatory	78
	122

In addition to these, the present term gives the following:

General Chemistry—Sophomore and Medical	50
Analytical Chemistry—Medical	15
Analytical Chemistry—Special	1
	66

Making a total of two hundred and ninety-five (295) students in this department for the two years and one term ending December 19th, 1884.

This exhibit does not take into account two classes in this department which did not appear for recitation and work during the year 1883-4—the First Preparatory Chemistry and the Junior Physics. The first of these, which would number, judging from the number enrolled in the corresponding class—the First Preparatory Physics—about seventy students, could not be taught this year because of a lack of laboratory room and apparatus.

It was therefore, by vote of the faculty, advanced from the First to the Second Preparatory year, in the hope that it would then come within such limits as to be accommodated by our facilities.

By a change made last year by the faculty, Physics was advanced from the Sophomore to the Junior year. In this way the present Junior class had this subject while Sophomores. Furthermore, the class in Medical Chemistry in 1883-4 numbered thirty-six, but as only twenty-one could be accommodated in the laboratory, the remaining fifteen were obliged to wait until the next year to do their chemical work. The First Preparatory class in Physics, in 1884, was in charge of Mr. L. F. M. Easterday, who reports an enrollment of seventy-eight. Permit me to say that I am much pleased with the quality and quantity of work done by the various chemistry classes during these two years. While working under many disadvantages, not the least of which has been the lack of sufficient laboratory accommodation and conveniences, they have maintained a spirit of earnestness and enthusiasm very commendatory to them.

In General Chemistry the plan of instruction is to open the subject under consideration by a lecture, which brings out the salient points in as strong a light as possible. The student is referred to appropriate text and reference books for details, and is then brought into closer relations with his subject by working out, in the laboratory, a series of experiments, designed to illustrate its leading principles, and at the same time suggest further investigation. After this has been done, class-room recitation and examination serve to sift and arrange what he has gathered.

This method taxes more severely the time and resources of the instructor than the old text-book method, yet it abundantly justifies itself in the firm hold it gives to a student of his subject, and by the degree of interest that can be maintained by means of it. In Analytical Chemistry the work is largely in the laboratory, where the student is made to rely on and make use of his previously acquired knowledge, while frequent drills and examinations test his progress.

In speaking of the needs of this department I am at a loss to know with what to begin.

Our most pressing want now is room and working facilities. At no time since my connection with the University have these been adequate to the demand. In 1882–3, with forty students taking chemistry, we had work tables designed to accommodate but six.

In 1883–4, with an appropriation of one thousand dollars for that purpose, the number of tables was increased to twenty, and partially equipped with re-agent bottles, water, and gas fixtures. Still our numbers increase much more rapidly than our accommodations, and this year found us with over one hundred students classed in chemistry. Those who could not be accommodated in the laboratory were disposed of as before indicated.

I deem it a wise policy on the part of the University authorities to encourage, by affording every needed facility, as many as possible of our students to take at least a short course in this practical experimental work, both for its educational value in training the faculty of observation, and for the knowledge which it gives of principles underlying nearly every department of human labor.

Especially does it seem desirable that we attract and hold special and advanced students that they may here fit themselves for doing professional work in the rapidly multiplying fields of chemical industry.

The demand for men trained in practical chemical work is greater than the supply. Nebraska's University should stand in the front rank of those institutions that are offering to young men and women opportunities for making the most of themselves that they in turn may develop the resources of their country.

To extend a proper welcome to the students even now within our walls, and to attract those without who are now seeking such advantages, we need a building especially devoted to chemical purposes, built after the most approved plans and supplied with all modern conveniences.

That we might know, when the time for supplying our needs came, what advances had been made in the planning and arranging of chemical laboratories, and be able to command the maximum of convenience with a minimum of expense, I spent the last summer vacation in visiting and studying the plans of the best laboratories in Europe. The greater part of my time was used in Germany, where chemistry, as a science, reaches its greatest perfection, and consequently the appliances for successful teaching are most perfectly adapted to the ends sought.

I visited the great Universities at Bonn, Heidelberg, Strassburg, Munich, Leipzig, and Berlin, where every facility was freely afforded me for studying the construction, fittings, methods of ventilation, and general workings of their chemical laboratories. These buildings represent the ideas of such famous chemists as Bunsen, Kolbe, Hofman, and Fillig, and are models of convenience and utility.

I had the good fortune also to see many of the technical and agricultural laboratories, which are admirably equipped for their special uses. We should be able to combine the excellences of these institutions so as to make, here in the West, a laboratory second to none in the means of doing work that shall be a credit to the University and the State. While our necessities do not call for such extensive buildings as we find housing the chemical department at the famous Universities of Europe, yet we should build for all time, for our special needs and for growth.

The expense of such a building is not excessive. From thirty-five to forty thousand dollars will erect and equip a building with lecture rooms, laboratory work rooms, special and store rooms for the use of the general and special chemical work of the academic, industrial, and medical colleges. The demands of new classes and the necessity of working under many and trying disadvantages have prevented my doing much chemical work outside the class room.

Last year, in connection with Dr. C. F. Mabery, of Harvard University, I entered upon the investigation of the nature and properties of a class of new organic acids, hoping to find time to continue the work during the year, but the more pressing duties of the class room have crowded investigation out of the field for the present.

I am satisfied that investigations on the part of University professors, tending to push the boundaries of knowledge, will result in as much or greater good to their institutions as that of pure teaching alone.

During the two years covered by this report, there have been made in this laboratory the following quantitative analyses, exclusive of work done in classes:

1. Soil from Bitter Creek, Wyoming.
2. Wood from Bitter Creek, Wyoming.
3. Coal from Washington Territory.
4. Coal from Colorado.
5. Silicate from Red Willow, Nebraska.
6. Coal oil, from Lincoln, Nebraska.
7. Copper ore, from Tie Siding, Wyoming.

8. Cement from Republican Valley, Nebraska.
9. “ “ “
10. “ “ “
11. Gold bearing pyrites from Colorado.
12. Silver ore from Colorado.
13. Copper ore from North Park, Colorado.
14. Water from Lincoln, Nebraska.
15. Silver ore from New Mexico.
16. “ “ “
17. “ “ “
18. “ “ “
19. Siliceous powder from Republican Valley, Nebraska.
20. Coal oil from Columbus, Nebraska.
21. Clay from Clay county, Nebraska.
22. Stomach of steer, from Albion, Nebraska.
23. Whiskey from Lincoln, Nebraska.
24. “ “ “
25. Water, Insane Hospital, 8 samples, from Lincoln, Nebraska.
26. Alkaline earth from Lancaster County, Nebraska.
27. Iron ore from Nemaha county, Nebraska.
28. Zinc and lead ore from Franklin county, Nebraska.
29. Spring water from Dakota county, Nebraska.
30. Stomach of steer from Otoe county, Nebraska.
31. Coal gas from Lincoln, Nebraska.
32. Honey from Lincoln, Nebraska.
33. Water from “City well,” Lincoln, Nebraska.
34. Well water from Beatrice, Nebraska.
35. Baking powder from Lincoln, Nebraska.
36. Coal oil from Lincoln, Nebraska.

This list does not include a great number of qualitative and minor tests, such as are being made in the laboratory almost daily.

In conclusion I wish to express my obligations to Messrs. Jesse H. Holmes, G. B. Frankforter, and Elton Fulmer, chemical students, who have rendered valuable assistance in attending to the details of the laboratory.

As there is no provision for the payment of such services, I have remitted the usual laboratory fees in the cases of these three gentlemen as a partial remuneration for their work.

I would suggest that a small appropriation of five hundred dollars be made to pay for this much needed service during the next two years.

Very respectfully submitted,

H. H. NICHOLSON,
Professor of Chemistry and Physics.

University of Nebraska, Dec., 1884.

MILITARY DEPARTMENT.

LINCOLN, NEBRASKA, December 16, 1884.

To the Honorable the Board of Regents:

GENTLEMEN:—Having been ordered to duty as Professor of Military Science, etc., at the State University, by special order No. 266 from the Headquarters of the Army, dated Washington, November 12, 1884, in response to your application therefor, and having reported for such duty, I have the honor to submit for your consideration the following statements and recommendations:

1st. The arms and equipments formerly supplied to the University by the War Department having been recalled after the expiration of the detail of the army officer last on duty here, it may be desirable to obtain others in place of them. The following are the articles which will be issued and their value:

Two (2) 3-inch rifles	$ 900 00
Two (2) carriages and limbers for 3-inch gun	650 00
Equipments, etc.	47 05
Total value for 3-inch rifles, etc.	$1597 05
150 Springfield "Cadet" rifles, cal. 45, at $18,00 each	$2700 00
150 bayonet scabbards, steel, Cadet	136 50
150 waist belts and plates	75 00
150 cartridge boxes, cal. 45	187 50
Total for "Cadet" rifles, equipments, etc	$3099 00
Total value of all allowed	$4696 00

The following allowance of ammunition will be made annually without charge:

1,000 carbine metallic ball-cartridges, cal. 45.
1,000 metallic blank cartridges, cal. 45.
100 rounds blank cartridges for 3-inch gun.
300 friction primers.

The above articles are furnished without cost to the University, except for transportation and the furnishing of a bond for safe keeping, return, etc.

The requisition for them must be accompanied by a bond in double their value, conditioned that good care will be taken of them, that they will be safely kept and accounted for, and returned within thirty days after required by the Secretary of War.

If it is thought best to secure these arms, or part of them, it would be advisable that the requisition therefor be forwarded at an early date.

For the safe keeping of the cannon it would be necessary to widen the doorway or make a double door for the entrance of the carriages, etc., to the room now occupied as an armory, and an inclined plane down which they could be run. This would probably not be very expensive.

I would recommend the securing of at least 100 "Cadet rifles" and "equipments," and of the 3-inch rifles and carriages with their appendages and equipments, and of the annual allowance of ammunition.

2d. The course of study to be required in this Department will be recommended by the Faculty, as will also the number of drills; and the terms in which they should be taken; and will come before your body in a communication from them.

3d. Inasmuch as the number of students now coming under the requirement to drill is not large, and it is advisable to make the Military Department as large as possible in numbers, and, for that purpose, to induce others, not required, to avail themselves voluntarily of its benefits, I would respectfully recommend to the Regents the offering of prizes, which it is hoped will excite additional interest amongst the students and enlarge the Department at no great expense to the University.

I would suggest the following prizes:

1st. A prize banner. To be awarded to the best drilled company, to be competed for in June, near or at the close of the school year.

2d. A sword and belt, or its equivalent value, to be given to that captain organizing and maintaining throughout the year the largest and best equipped company.

3d. A gold medal to the best drilled "private."

4th. A silver medal to the second best drilled "private."

5th. Should the 3-inch rifles be procured, a suitable prize for the best drilled "gun detachment" and for the best drilled "cannoneer."

The "banner" would be the most expensive of all the prizes, but could be so made that it would serve for several years by inscribing upon it the letter of the company and the date of winning it in successive years, being held only until the time it shall again be competed for. The other articles would not be so expensive. About $75.00 would secure these articles this year, after which the cost of the banner could be deducted.

There will also be necessary for the Cadet officers six swords and eight belts, none being furnished by the government. There are two swords now on hand without belts. The exact cost of these articles is not known, but swords can be procured at about $6.00 each and belts at half that price. An appropriation of about $50.00 would I think secure these articles, which would then become the property of the University.

The above are about all the expenses of the Military Department now thought of, except for necessary stationery, record books, etc., and those pertaining to the University Band, of the needs of which I am not now informed.

Should any more specific or detailed information be desired I shall be glad to give it.

I am, very respectfully,
Your obedient servant,
EDGAR S. DUDLEY,
First Lieut. 2d U. S. Artillery, Professor of Military Science, Etc.

THE LIBRARY.

To the Chancellor of the University:

I beg leave to submit the following report of the present condition of the Library:

In December, 1882, the number of catalogued volumes in the library, exclusive of those relating to Agriculture at the College Farm, was 4,000. The number of catalogued volumes now in the library is 4,265. In addition to these are about 150 volumes uncatalogued. Thus, the increase in two years is only about 415 volumes.

Many departments of the University are almost destitute of books.

The departments of Chemistry and Geology have each made a respectable beginning; but the number of books is entirely inadequate to their needs.

The departments of Zoology, Botany, and Physics have each a few miscellaneous volumes, for the most part collected in early days, without regard to system or completeness of classification.

In Greek Language and Literature there are scarcely any texts, and little special material for independent or original investigation.

The department of Latin Language and Literature has a fair collection of text-editions, but there are still many deficiencies, and the special monographic literature of the subject is almost entirely lacking.

In the various branches of Modern Languages and Literature, except in English, the condition of the library is still worse.

The numerous divisions of Political Science are without adequate material.

In History, the library has a fair collection of authorities, relating to German and English institutions; but in American history there is little of value, and in all branches of the subject the work of the department is crippled for want of many of the most ordinary sources.

From these facts it will be seen that the first and most pressing need of the library is books. It must be admitted, however, that the facilities which we do possess are utilized to the utmost. It is a matter of frequent remark that so much and so constant use has seldom been made of so small a library.

There is a growing tendency in nearly all departments of the University to employ the library more and more as a common workshop or laboratory; and we have now reached a stage in the development of the institution when it is imperatively necessary that it should no longer be neglected.

No other single department is so important as the library, since nearly all departments draw from it their life-blood. It must soon receive the attention of the authorities, if the institution can be expected to develop into a University in fact as well as in name. An appropriation of $20,000 for books alone during the next two years would not give us the material which could at once be utilized. For comparative study a large library is a necessity.

Another want of the library is room. At this moment three times the present space is needed for the reading room. From morning till night the present rooms are thronged with readers; confusion, discomfort, and injury to the books are the necessary consequence.

The few books already possessed could be made much more productive were they classified and arranged in separate compartments, with facilities for comfortable use.

In making provision for new buildings, a better place for the library should by all means be taken into consideration.

Very respectfully,

GEO E. HOWARD,
Librarian.